

**Robbins, Jan**  
**From:** Myers, Kim  
**Sent:** Tuesday, May 06, 2003 12 47 PM  
**To:** Robbins, Jan  
**Subject:** FW HSA Clarification

Here is the correct building

-----Original Message-----

**From:** **Parsons, Duane**  
**Sent:** Tuesday, May 06, 2003 12 44 PM  
**To:** Myers, Kim  
**Subject:** RE HSA Clarification

It should read 566

**Duane Parsons**

RISS Facility Characterization Coordinator  
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-----Original Message-----

**From:** **Myers, Kim**  
**Sent:** Tuesday, May 06, 2003 8 21 AM  
**To:** Parsons, Duane  
**Subject:** FW HSA Clarification

Duane,

Can you verify whether 556 should read 566 Thank you

Kim

-----Original Message-----

**From:** **Robbins, Jan**  
**Sent:** Tuesday, April 29, 2003 8 57 AM  
**To:** Myers, Kim  
**Subject:** HSA Clarification

\*\*\*\*\*

Kim, I am entering info from the Historical Site Assessment in the 790 RLCR and have found a slight discrepancy The HSA Facility ID names Buildings 556, 566A, however, the Physical Description and some other sections name Buildings 566, 566A I am assuming that "556" should read "566" Please confirm

Thanks,

JAN ROBBINS, SOM ARC  
RFFO CERCLA ADMINISTRATIVE RECORD FILE CENTER

1a / 46



# **Rocky Flats Environmental Technology Site**

## **TYPE 1 RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)**

**Building 790**

**REVISION 0**

**April 15, 2003**

**CLASSIFICATION REVIEW NOT REQUIRED PER  
EXEMPTION NUMBER CEX-005-02**



**ADMIN RECORD  
IA-A-001393**

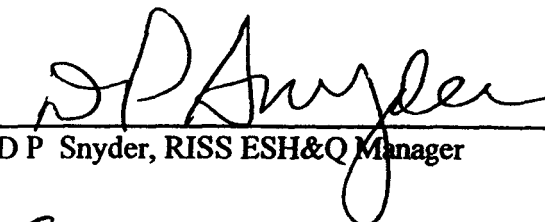
**TYPE 1  
RECONNAISSANCE LEVEL CHARACTERIZATION  
REPORT (RLCR)**

**Building 790**

**REVISION 0**

**April 15, 2003**

Reviewed by:  Date: 4-16-03  
Don Risoli, Quality Assurance

Reviewed by:  Date: 4/16/03  
D P Snyder, RISS ESH&Q Manager

Approved by:  Date: 4/17/03  
Mike Auble, K-H D&D Project Manager

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## ATTACHMENTS

- A    Facility Location Map
- B    Historical Site Assessment Report
- C    Radiological Data Summaries and Survey Maps
- D    Chemical Data Summaries and Sample Maps
- E    Data Quality Assessment (DQA) Detail

## ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
DCGL <sub>EMC</sub>	Derived Concentration Guideline Level – elevated measurement comparison
DCGL <sub>W</sub>	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U S Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

## EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the RFETS Decommissioning Program Plan (DPP, K-H, 1999) and compliant disposition and waste management of Building 790. Because this facility was an anticipated Type 1 facility, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All PDSP Data Quality Objectives were satisfied. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces [i.e., floors (slabs), walls, ceiling and roof]. Environmental media beneath and surrounding the facilities were not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400.5. All beryllium sample results were less than  $0.1 \mu\text{g}/100\text{cm}^2$ . All bulk samples of building materials suspected of containing asbestos were "None Detected". Fluorescent light ballasts may contain PCBs. All fluorescent light ballast will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. Demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable. Concrete associated with this facility meets the criteria for recycling concrete per the RFCA RSOP for Recycling Concrete.

Based upon this RLCR, Building 790 is considered a Type 1 facility and is acceptable for demolition per the constraints identified within this report. To ensure the facility remains free of contamination and the RLC data remain valid, Level 2 isolation controls have been established and the area posted accordingly.

## 1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and compliant disposition and waste management of Building 790. Because this facility was an anticipated Type 1 facility, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). All PDSP Data Quality Objectives were satisfied. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facilities [i.e., floors (slabs), walls, ceiling and roof]. Environmental media beneath and surrounding the facilities were not within the scope of this RLC and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these is Building 790. The location of Building 790 is shown in Attachment A, *Facility Location Map*. The facility no longer supports the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before Building 790 can be decommissioned, a Reconnaissance Level Characterization (RLC) must be conducted; this document presents the RLC results. The RLC was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP), and the Pre-Demolition Survey Plan (MAN-127-PDSP). The RLC built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

### 1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC effort. The RLC was performed before building decommissioning to define the radiological and chemical conditions of a facility. The RLC conditions are compared with the release limits for radiological and non-radiological contaminants. RLC results will enable project personnel to make decommissioning decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

### 1.2 Scope

This report presents the pre-demolition radiological and chemical conditions of Building 790. Environmental media beneath and surrounding the facility is not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA. Both the facility and environmental media will be dispositioned pursuant to RFCA.

### 1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Pre-Demolition Survey Plan (MAN-127-PDSP). Refer to Section 2.0 of MAN-127-PDSP for these DQOs.

## 2 HISTORICAL SITE ASSESSMENT

A facility-specific Historical Site Assessment (HSA) was conducted to understand the Building 790 facility history and related hazards. The assessment consisted of facility walk-downs, interviews, and document review, including review of the Historical Release Report. Results were used to identify data gaps and needs, and to develop radiological and chemical characterization packages. Results of the facility-specific HSA were documented in a *Historical Site Assessment Report (HSAR) for Area 4, Group 2 Facilities*, dated July 2002, Revision 0. Refer to Attachment B, *Historical Site Assessment Report*, for a copy of the Building 790 HSAR. In summary, the HSAR identified the potential for radiological and chemical hazards, including the potential for beryllium, asbestos containing materials and PCBs in paint and light ballasts.

## 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Building 790 was characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to the RISS Characterization Project files for the Building 790 Radiological Characterization Plan). Radiological survey unit packages were developed for each survey area. The Survey Unit identification numbers are as follows: 790-4-001 (Building 790 Interior) and EXT-B-001 (Building 790 Exterior). The survey areas included the interior and exterior surfaces of the facility. Individual radiological survey unit packages are maintained in the RISS Characterization Project files.

Building 790 survey unit packages were developed in accordance with Radiological Safety Practices (RSP) 16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16 02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16 05, *Radiological Survey/Sample Quality Control*.

Thirty-seven (37) TSA measurements (15 random, 10 biased, 10 equipment and 2 QC) and thirty-five (35) RSA measurements (15 random, 10 biased, and 10 equipment) were performed. A minimum 5% of the facility interior surfaces and 25% of utility trenches, and source wells were scanned for alpha and beta contamination. The RLC data confirmed that the facilities do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. Level 2 isolation control postings are displayed on the buildings to ensure no radioactive materials are inadvertently introduced.



The exterior radiological surveys for Building 790 were performed as part of the RISS West Side Exterior PDS strategy effort (authorized by Department of Energy letter, 02-DOE-01598, dated December 13<sup>th</sup>, 2002 and approved by CDPHE letter, *RE Proposed Deviations From The Pre-Demolition Survey Plan (PDSP)*, dated January 27, 2003; refer to the RISS Characterization Project Files for letter copies). The RISS West Side exterior building radiological surveys and locations can be found in survey unit package EXT-B-001, *RISS West Side Building Exteriors*. Seven (7) biased TSA measurements, seven (7) biased RSA measurements, and a one (1) square meter scan at each of the seven TSA/RSA locations were performed at biased locations on the exterior surfaces of Building 790. In addition, one (1) biased TSA measurement, one (1) biased RSA measurement, and 10 percent scan surveys were performed on the exterior concrete surfaces associated with Building 790. The RLC data collected in exterior survey unit package EXT-B-001 confirmed that the exterior surfaces of Building 790 do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey map locations for the West-Side Exterior survey unit package EXT-B-001 are maintained in the RISS Characterization Project files.

#### **4 CHEMICAL CHARACTERIZATION AND HAZARDS**

Building 790 was characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on, or in Building 790. Based upon a review of historical and process knowledge, visual inspections, and RLCP and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files for the Building 790 Chemical Characterization Plan) was developed during the planning phase that describes sampling requirements, the justification for the sample locations and the estimated number of samples. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs.

##### **4.1 Asbestos**

A comprehensive, invasive asbestos inspection was conducted to determine the presence of friable and non-friable asbestos containing building materials. The characterization for asbestos was conducted in accordance with the PDSP. A CDPHE-certified asbestos inspector conducted the asbestos inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1*. Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector.

All bulk samples of building materials suspected of containing asbestos were "None Detected". Asbestos laboratory analysis data and sample location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

#### **4.2 Beryllium (Be)**

Based on the HSAR and personnel interviews, Building 790 was an anticipated Type 1 facility. There was not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in these buildings. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium smear sample results were less than  $0.1 \mu\text{g}/100\text{cm}^2$  and meet the unrestricted release limits. Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

#### **4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]**

Based on a review of the HSAR and facility walk-downs, Building 790 was designed to perform radiometric calibrations. According to WSRIC records, the only RCRA constituent containing materials generated in Building 790 were Lead/Acid batteries, solder tips, isopropyl alcohol, and scrap metals that contained Silver and Lead. There is no evidence that these materials have contributed to contamination of the facility, therefore, sampling for RCRA/CERCLA constituents was not performed as part of the RLC process.

Building 790 may contain RCRA regulated materials such as mercury switches, fluorescent lamps, and Lead shielding. A thorough inspection of the facility will be made, and all regulated materials will be removed, prior to demolition.

Sampling for lead in paint in this facility was not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal.

#### **4.4 Polychlorinated Biphenyls (PCBs)**

Based on a review of the HSAR and facility walk-downs, Building 790 does not have a history of PCB use and does not show evidence of contamination, therefore, sampling was not performed as part of the RLC process. Based on the age of Building 790 (constructed in 1991), the paint is not suspected of containing PCBs.

Because Building 790 may contain fluorescent light ballasts containing PCBs, fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations. PCB ballasts will be identified based on factors such as labeling (e.g., PCB-containing and non PCB-containing), manufacturer, and date of manufacturing. All ballasts that do not indicate non PCB-containing are assumed to be PCB-containing. Leaking PCB containing ballasts will be removed prior to demolition, and disposed of in accordance with Colorado hazardous waste regulations.

## 5 PHYSICAL HAZARDS

Physical hazards associated with Building 790 consist of those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. Building 790 has been relatively well maintained and is in good physical condition, therefore, does not present hazards associated with building deterioration. However, there is a basement room approximately 15 feet below grade and nine (9) radioactive source storage wells (empty) also located below ground level. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

## 6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning Building 790, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- ◆ the *number* of samples and surveys,
- ◆ the *types* of samples and surveys,
- ◆ the sampling/survey process as implemented "in the field", and,
- ◆ the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment E.

## 7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Building 790 will generate a variety of wastes. Estimated waste types and waste volumes are presented below. All waste can be disposed of as sanitary waste, except PCB Bulk Product Waste. There is no radioactive or hazardous waste. PCB ballast will be managed pursuant to Site PCB waste management procedures.

Waste Volume Estimates and Material Types, Building 790							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
790	24,000	0	1,900	800	120	0	None

## 8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards contained in this RLCR, Building 790 is classified as a RFCA Type 1 facility pursuant to the RFETS Decommissioning Program Plan (DPP, K-H, 1999) and is acceptable for demolition within the constraints identified below. The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data.

The Building 790 RLC was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. Building 790 does not contain radiological or hazardous wastes. Any PCB ballasts will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable. Environmental media beneath and surrounding the facility will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA. All concrete surfaces can be used as backfill on site in accordance with the RFCA RSOP for Recycling Concrete.

To ensure Building 790 remains free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and posted accordingly to prevent the inadvertent introduction of contaminants.

## 9 REFERENCES








- DOE/RFFO, CDPHE, EPA, 1996 *Rocky Flats Cleanup Agreement (RFCA)*, July 19, 1996.
- DOE Order 5400.5, "Radiation Protection of the Public and the Environment "
- DOE Order 414.1A, "Quality Assurance "
- EPA, 1994 "The Data Quality Objective Process," EPA QA/G-4
- K-H, 1999. *Decommissioning Program Plan*, June 21, 1999.
- MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev 0, November 15, 2000
- MAN-076-FDPM, *Facility Disposition Program Manual*, Rev. 1, September 1999
- MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev 3, April 23, 2001
- MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev 0, April 23, 2001
- MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual*, December 1997 (NUREG-1575, EPA 402-R-97-016)
- PRO-475-RSP-16 01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure*, Rev 1, May 22, 2001
- PRO-476-RSP-16 02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev 1, May 22, 2001
- PRO-477-RSP-16 03, *Radiological Samples of Building Media*, Rev 1, May 22, 2001
- PRO-478-RSP-16 04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev 1, May 22, 2001
- PRO-479-RSP-16 05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev. 1, May 22, 2001
- PRO-563-ACPR, *Asbestos Characterization Procedure*, Revision 0, August 24, 1999
- PRO-536-BCPR, *Beryllium Characterization Procedure*, Revision 0, August 24, 1999
- RFETS, *Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition*
- RFETS, *Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*
- RFCA *Standard Operation Protocol for Recycling Concrete*, September 28, 1999
- RFCA *Standard Operating Protocol for Facility Disposition*, August 14, 2000
- 40 CFR, Part 61, Subpart M – *National Emission Standard for Asbestos*, 7-1-99 Edition
- Colorado Air Quality Control Commission's Regulation No 8, Part B, "Emission Standards for Asbestos", November 1996
- Historical Site Assessment Report (HSAR) for Area 4, Group 2 Facilities, dated July 2002, Revision 0

# ATTACHMENT A

## Facility Location Map

# Area 4 Group 2 Building 790

## Standard Map Features

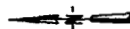
-  Buildings and other structures
-  Demolished buildings and other structures
-  Lakes and ponds
-  Streams, ditches, or other drainage features
-  Fences and other barriers
-  Paved roads
-  Dirt roads

### DATA SOURCE BASE FEATURES

Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RS, Las Vegas. Digitized from the orthophotograph, 1995

Scale = 1:12450  
1 inch represents approximately 1038 feet

Scale  
Scale: Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD27



U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by

CH2M HILL  
Construction Co., Inc.

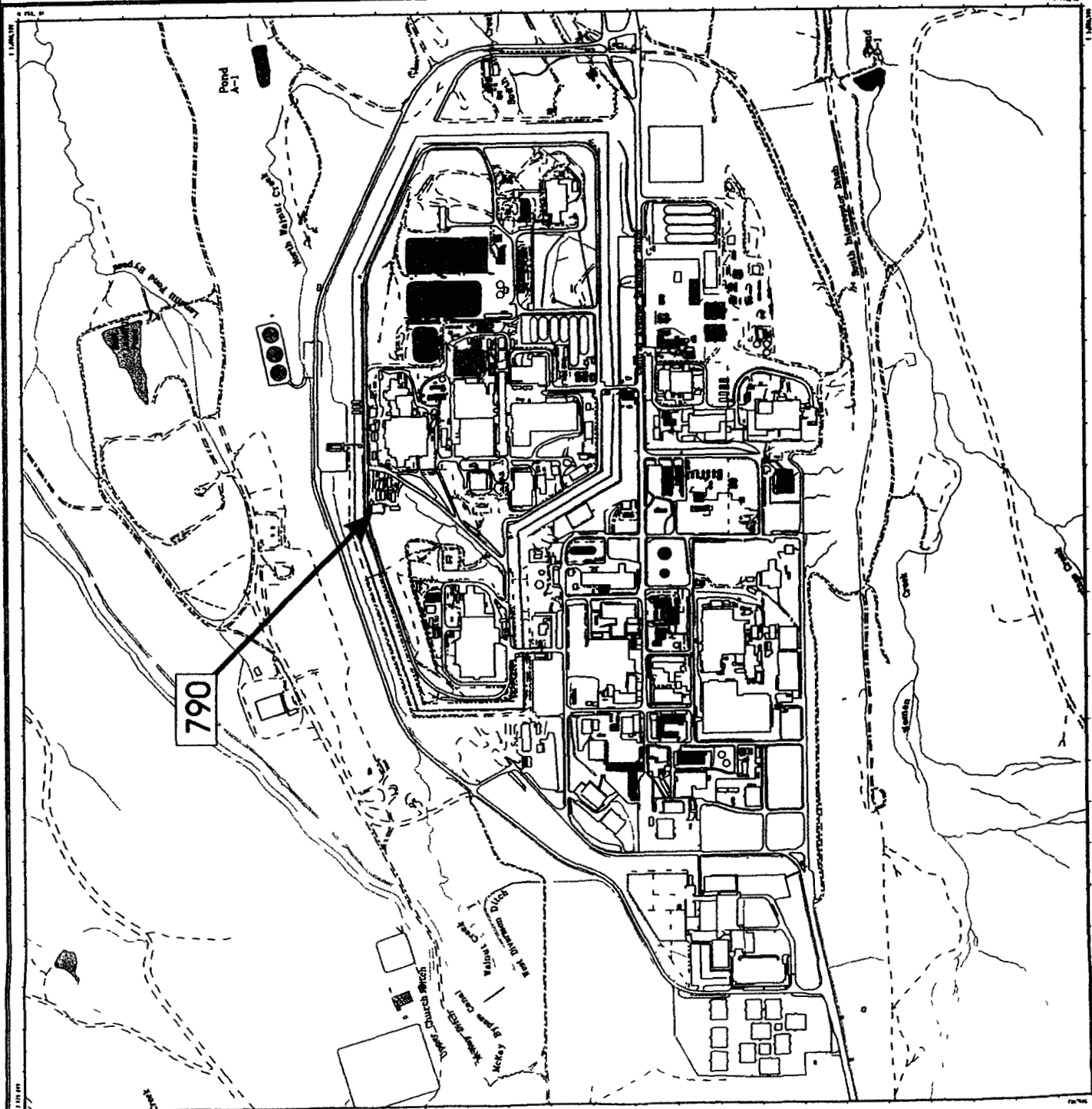
Prepared for



MAP ID: RY-2003

April 10, 2003

File: \wp\projects\03-01\9\November-790.cad



# ATTACHMENT B

## Historical Site Assessment Report



**D&D RISS Facility Characterization  
Historical Site Assessment Report  
July, 2002 Rev. 0**

**Facility ID: (Area 4 – Group 2) - Buildings 556, 566A, 569, 570, T760A, 790, and 906.**

**Anticipated Facility Type (1, 2, or 3)** Buildings 556, 566A are anticipated Type 2 facilities Buildings 569, 570, T760A, 790 and 906 are anticipated Type 1 facilities

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with *D&D Characterization Protocol*, RFETS MAN-077-DDCP, latest version, and *Facility Disposition Program Manual*, RFETS MAN-076-FDPM, latest version

**Physical Description**

**Building 566 and 566A**

Building 566 and 566A are a single structure divided in to a 13,700 sq ft Site Alarm Maintenance and Respirator Repair Facility and the 4000 sq ft filter plenum designated Buildings 566 and 566A Building 566A is basically the administrative portion of the 566 building Both facilities were constructed in the 1991 The walls are reinforces concrete, the roof is constructed with a metal sheet, lightweight concrete, insulation and a synthetic membrane to seal the roof The floor is pored concrete

Building 566 and 566A have the following utilities electric, plant water, plant sanitary, process waste line (lock and tagged-out) and an overhead sprinkler system and wall-mounted fire extinguishers provide fire protection

**Building 569**

Building 569, also known as the Crate Counting Facility, is a 7620 sq ft single-story building constructed in 1987 Building 569 is a prefabricated modular building constructed on a concrete slab The walls are constructed of metal siding mounted on a steel frame The roof is an insulated metal roof mounted to a steel frame

Building 569 has the following utilities, electric, plant water, plant sanitary, plant stream and fire protection is provided by wall-mounted fire extinguishers

**Building 570**

Building 570 is the filter plenum for the Crate Counting Facility and is a 683 sq ft. building constructed in 1987 Building 570 is a concrete building with 12-in thick reinforced concrete walls and a concrete floor The roof is constructed with insulated sheet metal supported by steel joists

Building 570 has the following utilities, electric, plant water, plant stream, and a plenum deluge system and wall-mounted fire extinguishers provide fire protection

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
July, 2002 Rev. 0**

**Trailer T760A**

Trailer T760A is a 500 square foot shower trailer. This trailer was placed into service in 1990 and is located south of the 750 Pad. T760A has aluminum siding and aluminum skirting. Each entry has wooden steps leading to the entry doors. The interior is configured with a separate men and woman's shower, toilet and locker room facility. The interior walls are wallboard and the floors are vinyl tiles. There is a propane gas tank located west of the trailer.

Trailer T760A has the following utilities: electric, propane gas, plant water, plant sanitary, and fire protection is provided by wall mounted fire extinguishers. The water and gas systems have been shut off.

**Building 790**

Building 790 is a 6,768-sq. ft. single-story concrete building constructed in 1991. The building consists of three irradiation cells (A, B, and C), an instrument calibration support area, a control room, and an office area. The irradiation cells and control room are constructed of 2-foot-thick concrete walls. The instrument calibration support and office areas are constructed of masonry blocks and steel reinforcement. The floors are poured in place concrete. The roof is constructed with insulated sheet metal supported by steel joists.

Building 790 has the following utilities: electric, plant water, plant sanitary, natural gas, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

**Building 906**

Building 906 is a 25,000 square foot TRU waste storage facility. Building 906 was constructed in 1994 as a LLW storage facility. In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-grades to comply with the TRU waste storage requirements. Building 906 is a steel frame building constructed on a concrete pad. The walls and roof are insulated aluminum mounted on the steel frame.

Building 906 has the following utilities: electric, fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
July, 2002 Rev. 0**

**Historical Operations**

**Building 566 and 566A**

Buildings 556 and 566A were originally constructed to be the site laundry facility. Laundry operations only lasted for about 2 years, and the facility was never approved to handle the highly contaminated laundry. Building 566 has always housed Respirator Cleaning and Repair operations. In 1999, the Alarms Maintenance Servicing Center moved into the 566 building.

Alarm maintenance involves cleaning equipment, replaces faulty components, and testing and inspecting equipment. The Respirator Cleaning and Repairs Facility contains a respirator washer, laundry carts, radioactivity monitoring equipment, detergent, bleach and water are used in the respirator washing process. Wastewater drains into two storage tanks located in the Building 566 pit and is then pumped to the sanitary drain. Building 566 has a process waste line which had been locked-out. Respirators and Alarm equipment are surveyed for radioactivity prior to being transported to Building 566.

In the late 1990s, the B566 ventilation air filter plenum was surveyed and no radiological contamination was found. The radiological posting were removed from the plenum. In the late 1990s, the washers and dryers were removed and the waste trench under the washers was surveyed. Only very low levels of contamination were found and the trench was decontaminated (using power washer).

**Building 569**

Building 569 contains radioactivity assay equipment and temporary waste storage operations. Building 569 is also RCRA Unit 59. Containers of low-level, low-level mixed, transuranic and transuranic mixed waste are received from throughout the plant and assayed using a passive-active counter. Containers are assayed prior to being accepted into Building 569. Containers whose contents meet the package criteria are transported to Buildings 664, 440, or 906 for storage pending off-site shipment. Those containers not meeting the package criteria, or which exhibit physical damage or improper packing are identified for repackaging. No unpacking or repackaging is performed in Building 569.

**Building 570**

Building 570 was built as the Building 569 air plenum, but has never been activated and has never housed any radiological or hazardous operation.

**Trailer T760A**

T760A was used as a shower trailer for workers at the 904 Pad and the pondcrete operation on the 750 Pad. The trailer had no radiological or hazardous operations. Routine radiological surveys show no evidence of contamination.

**D&D RISS Facility Characterization  
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**Building 790**

Building 790 was designed to perform radiometric calibrations. Specifically, it is used to expose thermoluminescent dosimeters (TLD) and calibrate site health physics instrumentation. The building consists of three irradiation cells (A, B, and C) an instrument calibration support area, a control room, and an office area. This facility uses and stores sealed sources and X-ray generating equipment.

Cell A is a hexagonal shaped two-story, low neutron-scatter-design silo that houses the Pneumatic Source Transfer System (PSTS) for neutron flux calibration of TLDs and radiation survey equipment. Cell B contains an X-ray generating system for the calibration of portable radiation measurement instruments and to irradiate TLDs. Cell C contains high-level gamma irradiators, which are used for gamma irradiation of TLDs and instruments. No hazardous chemicals are stored in Building 790, other than general cleaning supplies and small quantities (less than 1 pint) of alcohol and acetone to clean some instrument parts.

Sources stored in Building 790 include, but are not limited to Pu, Am, Sr-90, Cf, Cs, Co-60, Ba, and Pm.

**Building 906**

Building 906, also referred to as Central Waste Storage, is RCRA Unit 14 and was constructed in 1994 as a LLW storage facility. In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-graded to comply with the TRU waste storage requirements. Building 906 is currently permitted to store LLW, TRU, Mixed Waste, and TSCA waste, but primarily stores TRU waste. Building 906 has had no spills and there is no evidence of any building contamination. Some areas of the Building 906 have elevated dose rates caused by the TRU waste stored in the building.

**Current Operational Status**

Building 556 is operational as the site's Alarm Maintenance Center and the Respirators Cleaning and Repair Facility. Building 566A (air plenum for Building 566) is not operational. Building 569 is the Crate Counting Facility and is operational. Building 570 (the air plenum for Building 569) is not operational. Trailer T760A is a shower trailer and is not operational. Building 790 is currently operational as the site's Radiation Calibration Laboratory. Building 906 is currently operational as a TRU waste storage area.

**Contaminants of Concern**

**Asbestos**

*Describe any potential, likely, or known sources of Asbestos*

None of the buildings in this HSA have an asbestos posting. Building 569 is posted as being asbestos free. The posting references Document # JAF-010-90. The other facilities in this HSA have not had a comprehensive asbestos survey.

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**Beryllium (Be)**

*Describe any potential, likely, or known Be production or storage locations*

None of the buildings addressed in this HSA are on the List of known Be Areas. Respirators, which have been released from Beryllium areas are cleaned and repaired in Building 566. There is no history of beryllium building contamination associated with this activity.

*Summarize any recent Be sampling results*

Contact the IH group for any recent Be sample results

**Lead**

*Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.)*

Given the age of the facilities addressed in this HSA, lead in paint should not be a concern. Building 790 and 569 have some lead shielding in the assay equipment.

**RCRA/CERCLA Constituents**

*Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes)*

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations. See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA.

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

*Describe any potential, likely, or known spill locations (and sources, if any)*

None

*Describe methods in which spills were mitigated, if any*

None

**D&D RISS Facility Characterization  
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**PCBs**

*Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.).*

Due to the age of the facilities addressed in this HSA, there should not be a concern with PCBs in paint. PCBs were not known to have been handled in any of these facilities

*Describe any potential, likely, or known spill locations (and sources, if any)*

No PCB spills occurred in any of the facilities addressed in this HSA

*Describe methods in which spills were mitigated, if any*

No PCB spills occurred in any of the facilities addressed in this HSA

**Radiological Contaminants**

*Describe any potential, likely, or known radiological production or storage locations*

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations. See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA.

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

*Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.)*

None

*Describe methods in which spills were mitigated, if any*

None

*Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.)*

The primary isotope of concern includes, but is not limited to uranium and plutonium. Other than sealed sources, there were no known mixed fission products or pure beta emitters used in any of the facilities addressed in this HSA.

*Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.)*

See section below for information on IHSSs, PACs, and UBCs

# D&D RISS Facility Characterization Historical Site Assessment Report July, 2002 Rev. 0

## Environmental Restoration Concerns

*Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs)*

Building 566 and 556A are associated with or located near the following IHSSs, PACs, and UBCs,

- 1) PAC 700-150.2 "Radioactive site west of Building 771 and 776 ", Active
- 2) PAC 700-1102 "776-4", This IHSS was proposed NFA in 1997 and again in 2001 This NFA has not been approved and is currently under negotiation

Building 567 and 570 are associated with or located near the following IHSSs, PACs, and UBCs,

- 1) PAC 700-150 5 "Radioactive site west of Building 707 ", Proposed NFA in 1998

Buildings 790, 906, and Trailer T760A are not associated with or located near any IHSSs, PACs, and UBCs,

## Additional Information

*Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc )*

None

## References

*Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews)*

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases The Building WSRIC for those Buildings with a WSRIC In addition, a facility walkdowns and interviews were performed.

## Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
Building 566	8500	0	19800	3600	2100	TBD	N/A
Building 566A	2800	0	1150	900	0	TBD	N/A
Building 569	4000	0	1100	2000	1000	TBD	N/A
Building 570	3900	0	700	200	0	TBD	N/A
Trailer T760A	None	200	300	350	450	TBD	N/A
Building 790	24,000	0	1900	800	1200	TBD	N/A
Building 906	13,000	0	3000	3500	0	TBD	N/A

## Further Actions

*Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc )*

Begin the RLC/PDS process

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
July, 2002 Rev. 0**

**Note:**

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer Data will appear in the RLCR/PDSR.

Prepared By: Doug Bryant / /s/ / July 2002  
Name Signature Date



## ATTACHMENT C

# Radiological Data Summaries and Survey Maps

**SURVEY UNIT 790-4-001**  
**RADIOLOGICAL DATA SUMMARY - PDS**

**Survey Unit Description: 790 (Interior)**

790-4-001  
PDS Data Summary

<u>Total Surface Activity Measurements</u>			<u>Removable Activity Measurements</u>		
	35	35		35	35
	Number Required	Number Obtained		Number Required	Number Obtained
MIN	-5.4	dpm/100 cm <sup>2</sup>	MIN	-0.6	dpm/100 cm <sup>2</sup>
MAX	22.8	dpm/100 cm <sup>2</sup>	MAX	2.7	dpm/100 cm <sup>2</sup>
MEAN	6.1	dpm/100 cm <sup>2</sup>	MEAN	0.1	dpm/100 cm <sup>2</sup>
STD DEV	8.0	dpm/100 cm <sup>2</sup>	STD DEV	0.8	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	100	dpm/100 cm <sup>2</sup>	TRANSURANIC DCGL <sub>w</sub>	20	dpm/100 cm <sup>2</sup>

**SURVEY UNIT 790-4-001  
TSA - DATA SUMMARY**

Manufacturer	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model	DP-6	DP-6	DP-6	DP-6	DP-6
Instrument ID#	1	2	3	4	12
Serial #	1249	3125	1417	1256	3114
Cal Due Date	4/5/03	4/21/03	7/28/03	6/30/03	9/3/03
Analysis Date	4/1/03	4/1/03	4/1/03	4/1/03	4/2/03
Alpha Eff (c/d)	0.205	0.215	0.215	0.234	0.219
Alpha Bkgd (cpm)	2.0	0.0	2.0	0.7	4.7
Sample Time (min)	1.5	1.5	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5	1.5	1.5
MDC (dpm/100cm <sup>2</sup> )	48.0	48.0	48.0	48.0	48.0

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm <sup>2</sup> )	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm <sup>2</sup> )	Sample Net Activity (dpm/100cm <sup>2</sup> ) <sup>1,2</sup>
1	2	2.0	9.3	0.7	3.3	0.9
2	2	2.0	9.3	0.7	3.3	0.9
3	3	6.0	27.9	0.7	3.3	19.5
4	3	1.3	6.0	0.0	0.0	-2.4
5	3	3.3	15.3	2.0	9.3	6.9
6	3	5.3	24.7	2.7	12.6	16.2
7	2	6.0	27.9	1.3	6.0	19.5
8	2	0.7	3.3	1.3	6.0	-5.2
9	3	2.0	9.3	4.0	18.6	0.9
10	3	5.3	24.7	6.7	31.2	16.2
11	3	1.3	6.0	1.3	6.0	-2.4
12	2	2.0	9.3	0.0	0.0	0.9
13	3	4.0	18.6	4.7	21.9	10.2
14	3	4.7	21.9	0.7	3.3	13.5
15	2	3.3	15.3	1.3	6.0	6.9
16	2	3.3	15.3	0.7	3.3	6.9
17	4	2.7	11.5	1.3	5.6	3.1
18	2	2.0	9.3	0.0	0.0	0.9
19	3	4.7	21.9	4.7	21.9	13.5
20	3	6.7	31.2	2.0	9.3	22.8
21	4	6.0	25.6	4.0	17.1	17.2
22	2	2.0	9.3	4.7	21.9	0.9
23	4	2.0	8.5	2.0	8.5	0.1
24	4	3.3	14.1	0.7	3.0	5.7
25	3	3.3	15.3	0.7	3.3	6.9
26	2	1.3	6.0	0.7	3.3	-2.4
27	4	0.7	3.0	2.0	8.5	-5.4
28	1	2.7	13.2	0.7	3.4	4.8
29	1	4.7	22.9	1.3	6.3	14.5
30	4	4.0	17.1	2.7	11.5	8.7
31	3	2.7	12.6	1.3	6.0	4.2
32	3	2.0	9.3	0.0	0.0	0.9
33	3	5.3	24.7	1.3	6.0	16.2
34	3	1.3	6.0	1.3	6.0	-2.4

**SURVEY UNIT 790-4-001  
TSA - DATA SUMMARY**

Sample Location Number	Instrument ID#	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2) <sup>1,2</sup>
35	3	07	33	40	186	-5.2
1 Average LAB used to subtract from Gross Sample Activity					84	Sample LAB Average
					MIN	-5.4
					MAX	22.8
					MEAN	6.1
					SD	8.0
					Transuranic DCGL <sub>w</sub>	100

**QC Measurements**

20 QC	4	47	20.1	13	56	9.8
3 QC	12	77	35.2	33	151	24.8
1 Average QC LAB used to subtract from Gross Sample Activity					10.3	QC LAB Average
					MIN	9.8
					MAX	24.8
					MEAN	17.3
					Transuranic DCGL <sub>w</sub>	100

**SURVEY UNIT 790-4-001  
RSC - DATA SUMMARY**

<b>Manufacturer</b>	Eberline	Eberline	Eberline	Eberline
<b>Model</b>	SAC-4	SAC-4	SAC-4	SAC-4
<b>Instrument ID#</b>	5	6	7	8
<b>Serial #</b>	767	1164	830	952
<b>Cal Due Date:</b>	5/13/03	6/17/03	8/25/03	7/9/03
<b>Analysis Date</b>	4/1/03	4/1/03	4/1/03	4/1/03
<b>Alpha Eff (c/d)</b>	0.33	0.33	0.33	0.33
<b>Alpha Bkgd (cpm)</b>	0.2	0.1	0.1	0.0
<b>Sample Time (min)</b>	2	2	2	2
<b>Bkgd Time (min)</b>	10	10	10	10
<b>MDC (dpm/100cm<sup>2</sup>)</b>	9.0	9.0	9.0	9.0

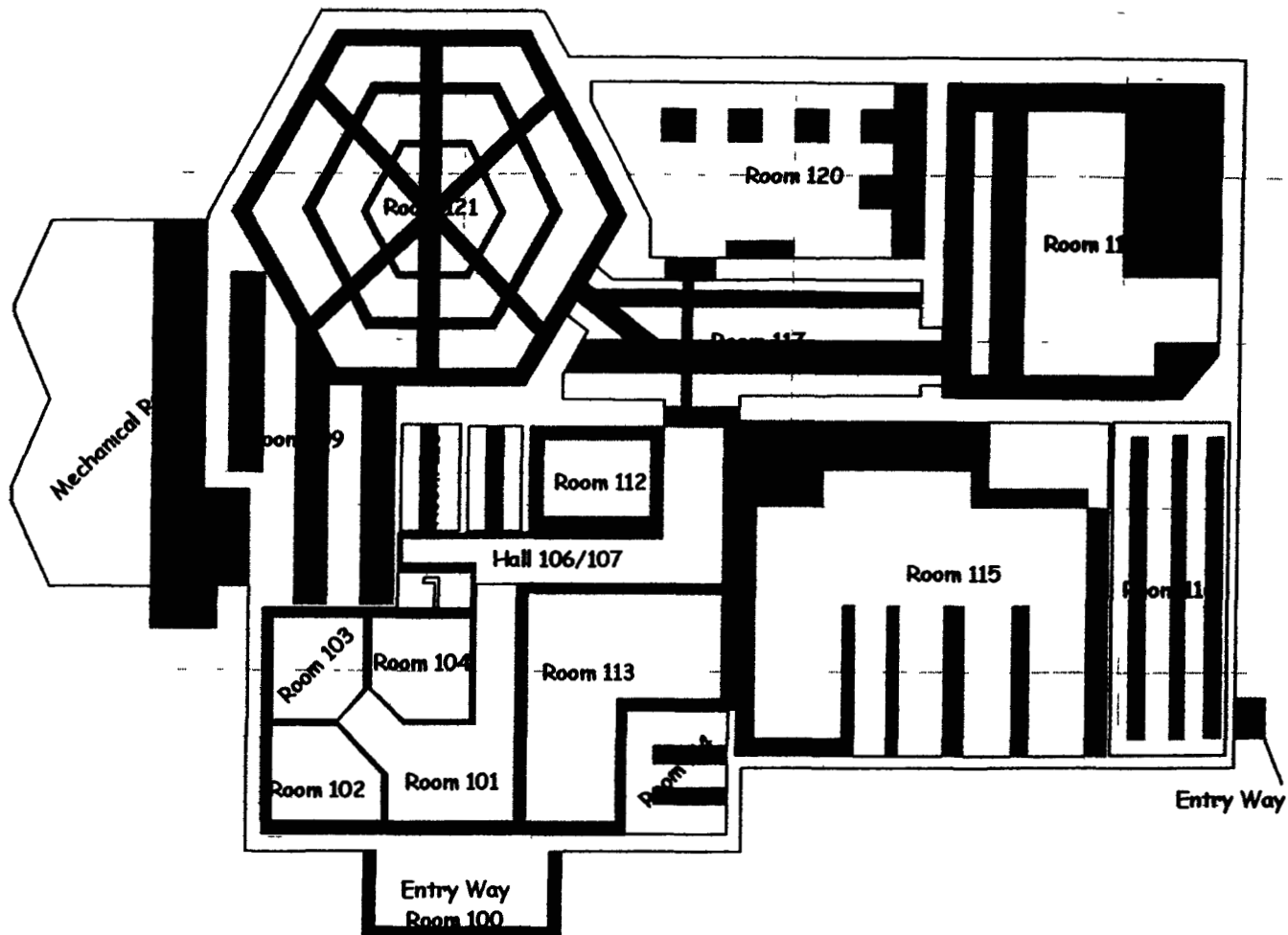
<b>Sample Location Number</b>	<b>Instrument ID#</b>	<b>Gross Counts (cpm)</b>	<b>Net Activity (dpm/100 cm<sup>2</sup>)</b>
1	5	1	0.9
2	6	0	-0.3
3	7	0	-0.3
4	8	1	1.5
5	5	0	-0.6
6	6	0	-0.3
7	7	0	-0.3
8	8	0	0.0
9	5	0	-0.6
10	6	0	-0.3
11	7	1	1.2
12	8	1	1.5
13	5	0	-0.6
14	6	0	-0.3
15	7	0	-0.3
16	8	0	0.0
17	5	1	0.9
18	6	1	1.2
19	7	0	-0.3
20	8	0	0.0
21	5	0	-0.6
22	6	0	-0.3
23	7	0	-0.3
24	8	0	0.0
25	5	0	-0.6
26	6	0	-0.3
27	7	0	-0.3
28	8	0	0.0
29	5	1	0.9
30	6	1	1.2
31	5	0	-0.6
32	7	0	-0.3
33	6	2	2.7
34	8	0	0.0
35	6	0	-0.3
		<b>MIN</b>	-0.6
		<b>MAX</b>	2.7
		<b>MEAN</b>	0.1
		<b>SD</b>	0.8
		<b>Transuranic DCGL<sub>w</sub></b>	20

# PRE-DEMOLITION SURVEY FOR BUILDING 790

Survey Area: A      Survey Unit: 790-4-001      Classification: 3  
 Building: 790  
 Survey Unit Description: 790 Interior  
 Total Area: 3,077 sq. m.      Total Floor Area: 749 sq. m.

PAGE 1 OF 1

## 790 Floor Plan



Scan Area

<b>SURVEY MAP LEGEND</b> ○ Smear & TSA Location ◇ Smear, TSA & Sample Location ■ Open/Inaccessible Area □ Area in Another Survey Unit	Neither the United States Government nor Kaiser E&E Co., nor DynCorp I&ET nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.	N 	0 FEET 0  0 METERS 0 DRAWING NOT TO SCALE	U.S. Department of Energy Rocky Flats Environmental Technology Site Prepared by: GHS Dept. 303-986-7707      Prepared for:  CH2MHILL Communications Group MAP ID: 03-0189/790-FP-SC      April 14, 2003
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# PRE-DEMOLITION SURVEY FOR BUILDING 790

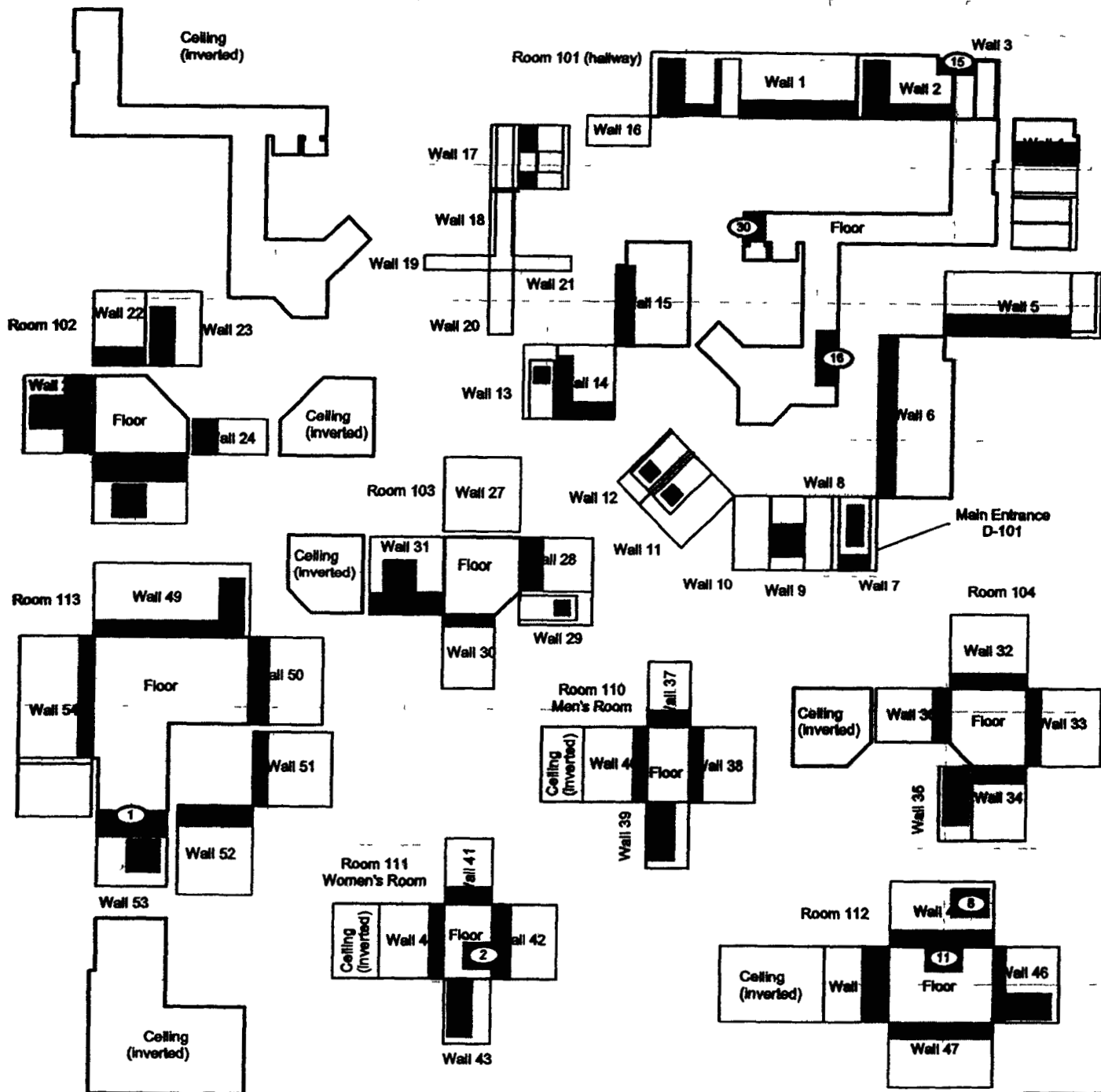
Survey Area A  
Building: 790  
Survey Unit Description 790 Interior  
Total Area 3,877 sq. m.

Survey Unit: 790-4-001

Classification: 3

Total Floor Area: 749 sq. m.

PAGE 1 OF 6



Scan Area

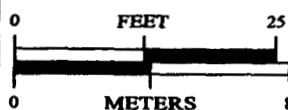
## SURVEY MAP LEGEND

- ① Smear & TSA Location
- ② Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information  
Survey Instrument ID #(s) & RCT ID #(s)  
1,2,3,4,9,10,11,12,13,14,15



1 inch = 18 feet 1 grid sq. = 1 sq. m

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 383-066-7767

Prepared for:



**CH2MHILL**  
Communications Group

MAP ID: 03-0189/790-IN1-SC

April 14, 2003



# PRE-DEMOLITION SURVEY FOR BUILDING 790

Survey Area. A

Survey Unit. 790-4-001

Classification: 3

Building: 790

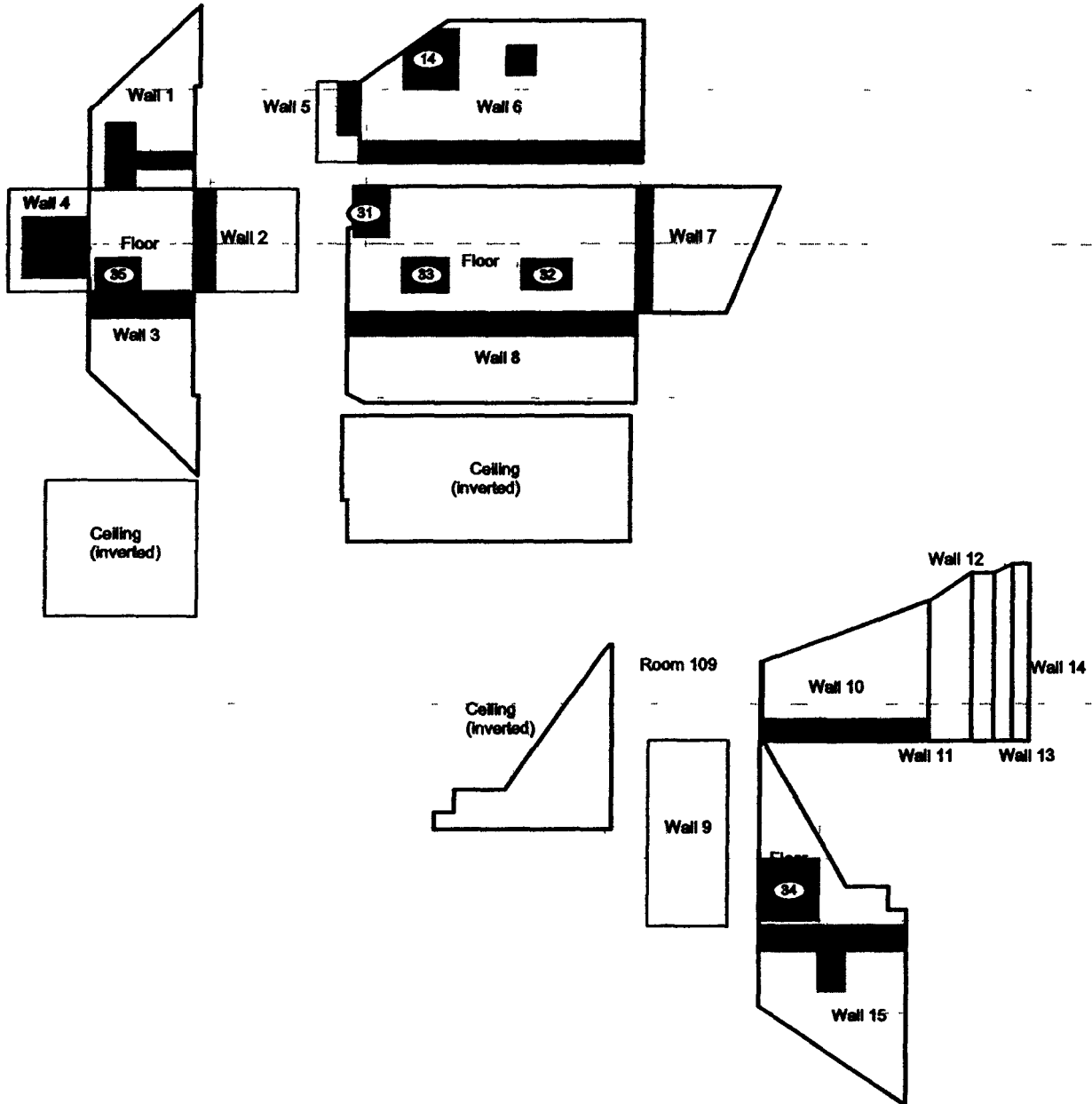
Survey Unit Description: 790 Interior

Total Area 3,077 sq. m.

Total Floor Area 749 sq. m.

PAGE 2 OF 6

## Room 108



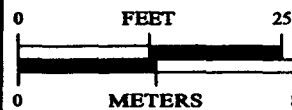
Scan Area

### SURVEY MAP LEGEND

- ① Scan & TSA Location
- ② Scan, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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N



1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 363-896-7797

Prepared for:



**CH2MHILL**  
Communications Group



MAP ID: 03-0189790-012-SC

April 14, 2003

Scan Survey Information  
Survey Instrument ID #(s) & RCT ID #(s)  
1,2,3,4,9,10,11,12,13,14,15

# **PRE-DEMOLITION SURVEY FOR BUILDING 790**

**Survey Area: A**

**Survey Unit: 790-4-001**

**Classification: 3**

**Building 790**

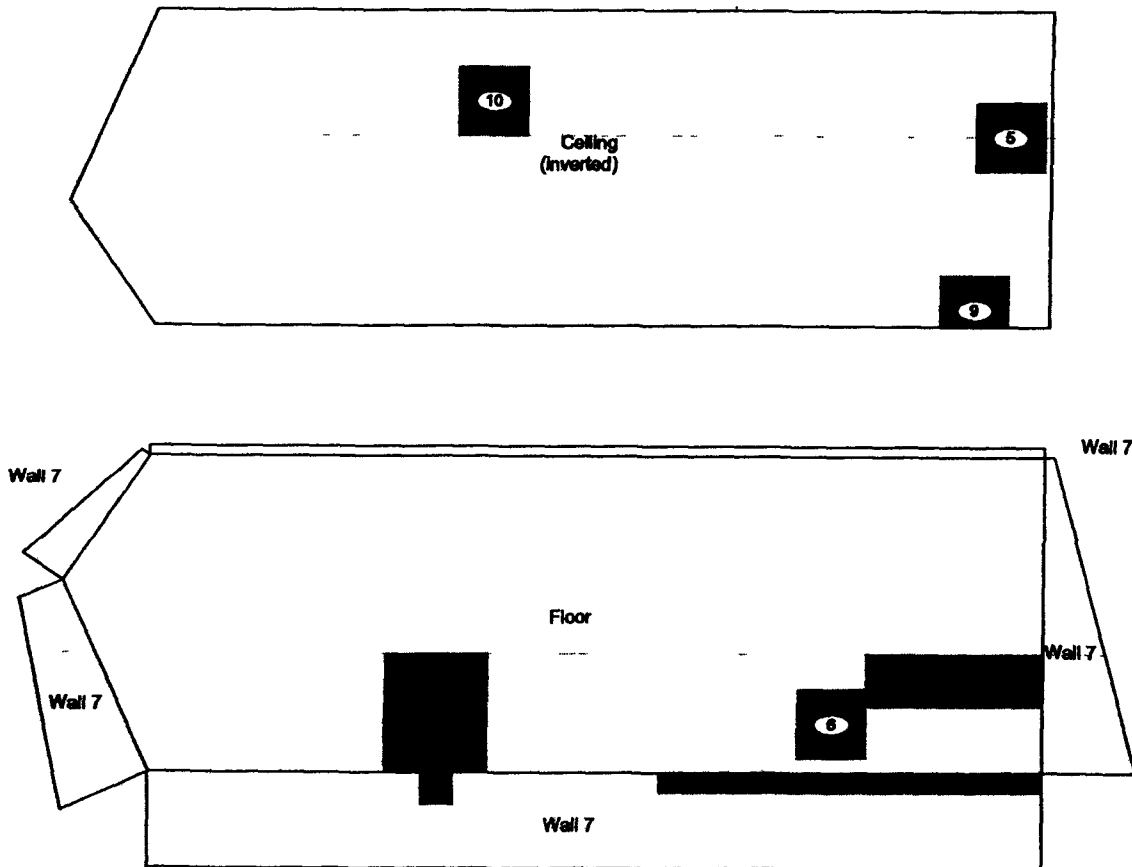
**Survey Unit Description 790 Interior**

**Total Area: 3,077 sq. m.**

**Total Floor Area: 749 sq. m.**

**PAGE 3 OF 6**

## **Room 108 Attic**



■ Scan Area

<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li>○ Sear &amp; TSA Location</li> <li>◇ Sear, TSA &amp; Sample Location</li> <li>■ Open/Inaccessible Area</li> <li>□ Area in Another Survey Unit</li> </ul>	<p>Neither the United States Government nor Kiewit H&amp;B Co., nor DynCorp I&amp;BT nor any agency thereof, nor any of their employees, makes any warranty express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p> <p><b>Scan Survey Information</b>  <b>Survey Instrument ID #(s) &amp; RCT ID #(s)</b>  <b>1,2,3,4,9,10,11,12,13,14,15</b></p>	<p align="center"><b>N</b> ↑</p>	<p align="center"><b>FEET</b></p> <p align="center">0 ————— 25</p> <hr/> <p align="center"><b>METERS</b></p> <p align="center">0 ————— 8</p> <p align="center">1 inch = 18 feet    1 grid sq. = 1 sq. m.</p>	<p align="center"><b>U.S. Department of Energy</b>  <b>Rocky Flats Environmental Technology Site</b></p> <p>Prepared by: GIS Dept. 383-606-7767    Prepared for:</p> <p align="center"><b>CH2MHILL</b>          Communications Group</p> <p align="center">MAP ID: 03-0189/790-INT-SC    April 14, 2003</p>
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# PRE-DEMOLITION SURVEY FOR BUILDING 790

Survey Area: A

Survey Unit: 790-4-001

Classification: 3

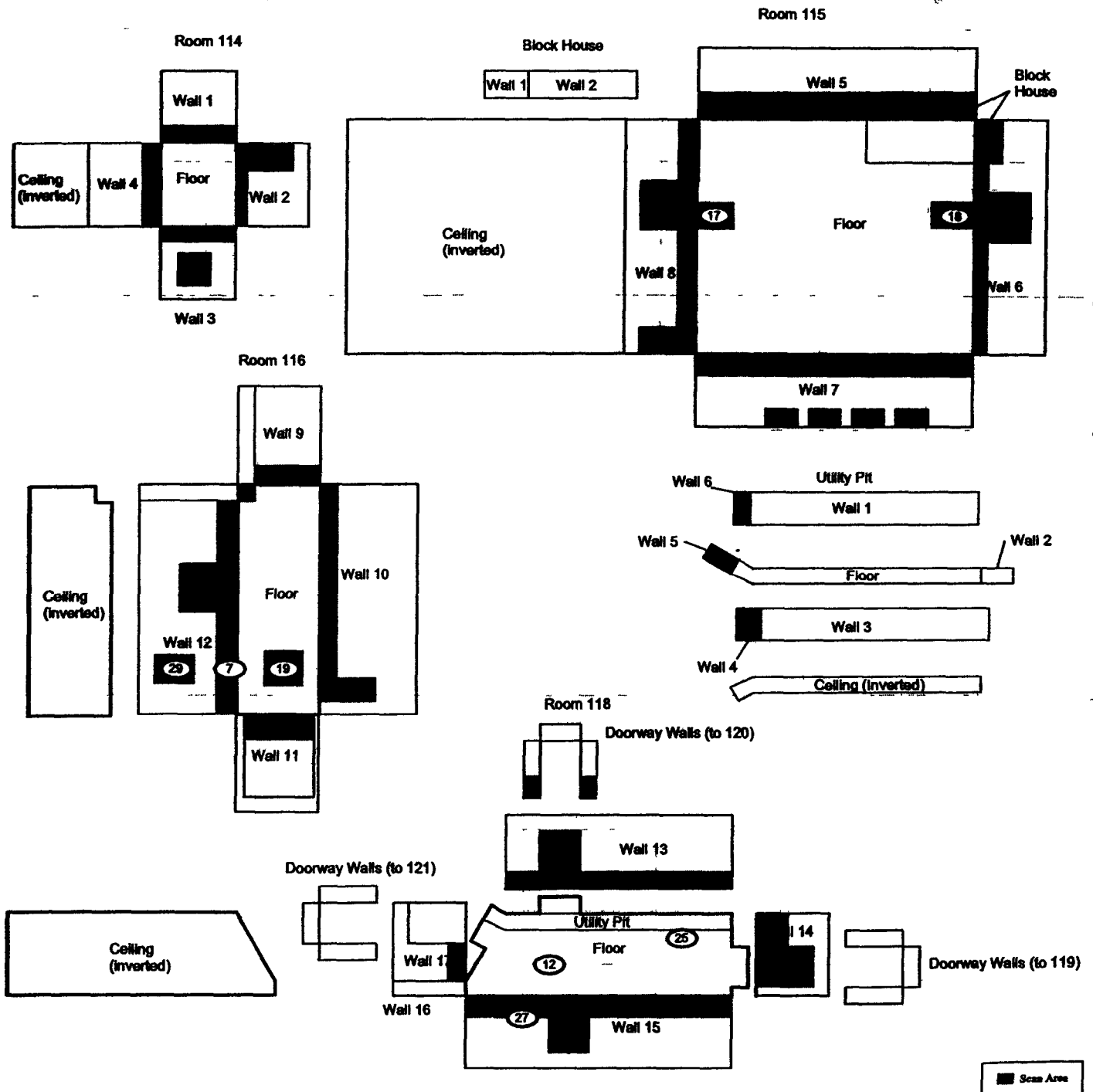
Building 790

Survey Unit Description: 790 Interior

Total Area: 3,077 sq. m.

Total Floor Area: 749 sq. m.

PAGE 4 OF 6



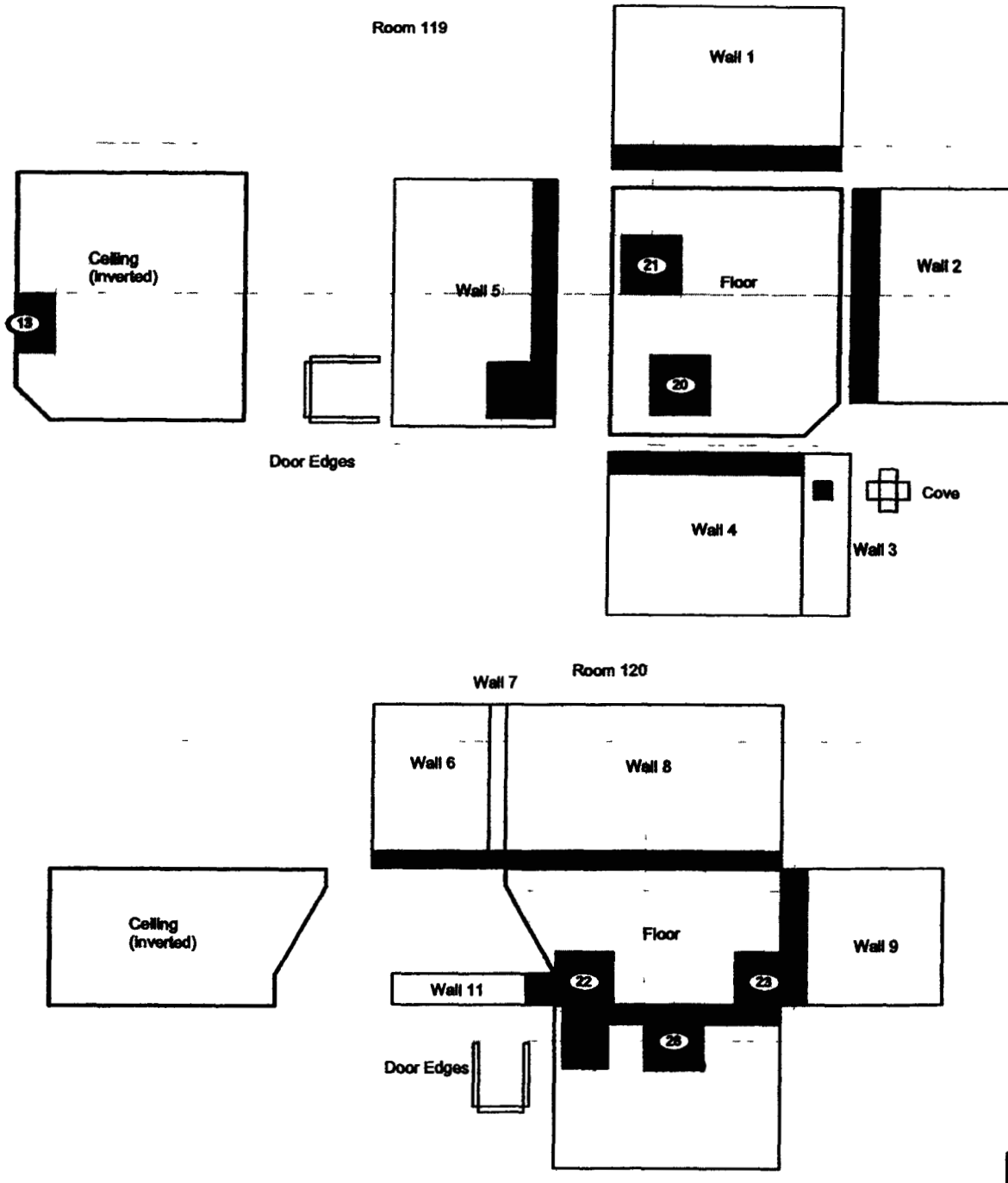
<b>SURVEY MAP LEGEND</b> (S) Sensor & TSA Location (S) Sensor, TSA & Sample Location (X) Open/Inaccessible Area (A) Area in Another Survey Unit	Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&HT, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. <b>Scan Survey Information</b> Survey Instrument ID #(s) & RCT ID #(s) 1,2,3,4,9,10,11,12,13,14,15	N 0 FEET 25 0 METERS 8 1 inch = 18 feet 1 grid sq. = 1 sq. m.	U.S. Department of Energy Rocky Flats Environmental Technology Site Prepared by: GRS Dept. 363-886-7707 Prepared for: <b>CH2MHILL</b> Communications Group MAP ID: 03-0189/790-04-SC April 14, 2003
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# **PRE-DEMOLITION SURVEY FOR BUILDING 790**

Survey Area: A      Survey Unit: 790-4-001      Classification: 3  
 Building: 790  
 Survey Unit Description: 790 Interior  
 Total Area: 3,077 sq. m.      Total Floor Area: 749 sq. m.

PAGE 5 OF 6

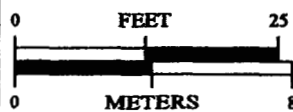


## **SURVEY MAP LEGEND**

- ① Smear & TSA Location
- ② Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

Neither the United States Government nor Ketter Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, opinion, product, or process disclosed, or represents that its use would not infringe privately owned rights.

**N**



1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information  
 Survey Instrument ID #(s) & RCT ID #(s)  
 1,2,3,4,9,10,11,12,13,14,15

U.S. Department of Energy  
 Rocky Flats Environmental Technology Site

Prepared by: GRS Dept. 303-886-7707

Prepared for:



**CH2MHILL**  
 Communications Group

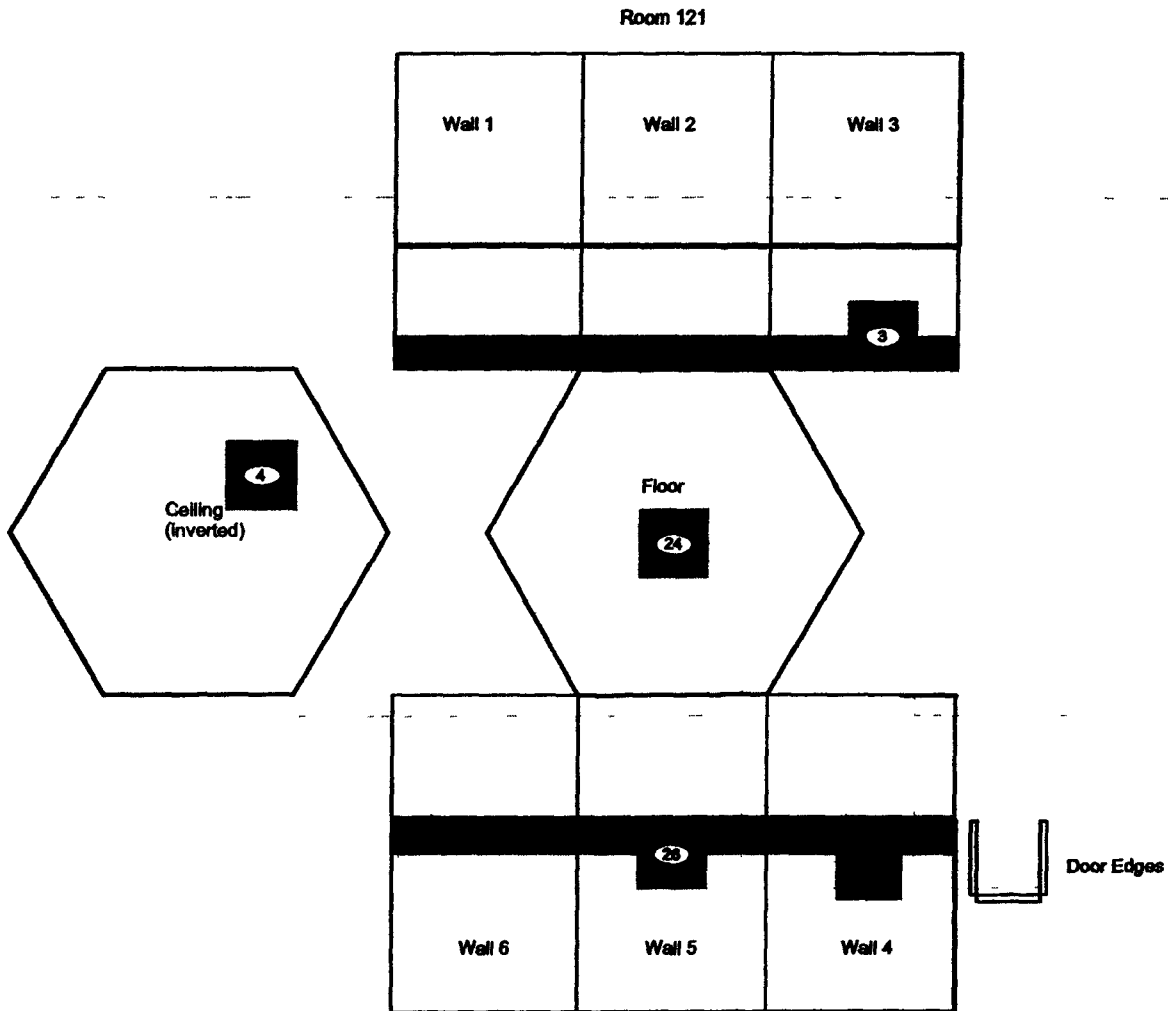
MAP ID 03-01891790-1N5-SC

April 14, 2003

# **PRE-DEMOLITION SURVEY FOR BUILDING 790**

**Survey Area. A**                      **Survey Unit. 790-4-001**                      **Classification: 3**  
**Building: 790**  
**Survey Unit Description: 790 Interior**  
**Total Area: 3,077 sq. m.**                      **Total Floor Area 749 sq. m.**

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■ Scan Area

<p><b><u>SURVEY MAP LEGEND</u></b></p> <p>⊙ Sensor &amp; TSA Location</p> <p>◊ Sensor, TSA &amp; Sample Location</p> <p>■ Open/Inaccessible Area</p> <p>□ Area in Another Survey Unit</p>	<p>Neither the United States Government nor Kasser Hill Co., nor DynCorp I&amp;ET nor any agency thereof, nor any of their employees, makes any warranty express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p> <p><b>Scan Survey Information</b></p> <p>Survey Instrument ID #(s) &amp; RCT ID #(s)</p> <p>1,2,3,4,9,10,11,12,13,14,15</p>	<p align="center"><b>N</b></p> <p align="center">➔</p>	<p align="center">0                      25</p> <p align="center">FEET</p> <p align="center">0                      8</p> <p align="center">METERS</p> <p align="center">1 inch = 18 feet    1 grid sq. = 1 sq m</p>	<p align="center">U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: G18 Dept. 383-606-7707      Prepared for:</p> <p align="center"> <b>CH2MHILL</b>          Communications Group       </p> <p align="center">MAP ID 03-0189790-016-SC      April 14, 2003</p>
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## ATTACHMENT D

### Chemical Data Summaries and Sample Maps

## Asbestos Data Summary

Sample Number	Room	Survey Map Location	Material Sampled & Location	Analysis Results
<b>Building 790</b>				
790-040103-315-201	116	1	White paint on north CMU wall	None Detected
790-040103-315-202	113	2	2' x 2' white acoustical drop ceiling tile	None Detected
790-040103-315-203	113	3	2' x 2' white acoustical drop ceiling tile	None Detected
790-040103-315-204	106	4	Joint compound only	None Detected
790-040103-315-205	106	5	Drywall only	None Detected
790-040103-315-206	116	6	White paint on south CMU wall	None Detected
790-040103-315-207	116	7	White paint on north CMU wall	None Detected

## Beryllium Data Summary

Sample Number	Room	Sample Location	Result
<b>Building 790</b>			
790-040103-315-101	116	1 On concrete floor of dock	<0.1
790-040103-315-102	115	2 Top of metal calibration cabinet # 28	<0.1
790-040103-315-103	119	3 Top of electrical panel, south wall	<0.1
790-040103-315-104	120	4 On concrete floor of X-Ray Vault, NW corner	<0.1
790-040103-315-105	121	5 In drainage basin at bottom of pit, Neutron Vault	<0.1
790-040103-315-106	121	6 On electrical panel, east wall of Neutron Vault	<0.1
790-040103-315-107	118	7 On concrete floor, SE corner	<0.1
790-040103-315-108	113	8 Inside Hoodaire fume hood, south wall	<0.1
790-040103-315-109	113	9 Top of ceiling fluorescent light fixture	<0.1
790-040103-315-110	118	10 Inside electrical trench on brace	<0.1



# ATTACHMENT E

## Data Quality Assessment (DQA) Detail

## **DATA QUALITY ASSESSMENT (DQA)**

### **VERIFICATION & VALIDATION OF RESULTS**

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically asbestos and beryllium)

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed. The radiological survey assessment is provided in Table E-1, asbestos in Table E-2 and beryllium in Table E-3. A data completeness summary for all results is given in Table E-4

All relevant Quality records supporting this report are maintained in the RISS Characterization Project File. The report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location

Beta/gamma survey designs were not implemented for Building 790 based on the conservatism of the Transuranic limits used as DCGLs in the unrestricted release decision process. Survey designs were implemented based on the Transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Transuranic DCGL<sub>w</sub> (100 dpm/100cm<sup>2</sup>) and the Uranium DCGL<sub>w</sub> (5,000 dpm/100cm<sup>2</sup>) unrestricted release limits

Consistent with EPA's G-4 DQO process, the radiological survey design for each survey unit performed per PDS requirements was optimized by checking actual measurement results acquired during pre-demolition surveys against the model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired

### **DQA SUMMARY**

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable certainties

Based upon an independent review of the radiological data, it was determined that the original project DQOs satisfied MARSSIM guidance. All media surveyed and sampled yielded results supporting a Type 1 facility classification. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable RSPs, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits.

Chain of Custody was intact, documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of further contamination into the facility. On this basis, all Building 790 RLC data are useable based on the confidences stated herein and are considered satisfactory without qualification.

Table E-1 V&V of Radiological Results - Building 790

V&V CRITERIA, RADIOLOGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)	
QUALITY REQUIREMENTS			
Parameters		Measure	Frequency
ACCURACY	Initial calibrations	90%-x<110%	≥1
	Daily source checks	80%-x<120%	≥1/day
	Local area background Field	typically < 10 dpm	≥1/day
PRECISION	Field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals
REPRESENTATIVENESS	MARSSIM methodology Survey Units 790-4-001 (interior) and EXT-B-001 (exterior)	statistical and biased	NA
	Survey Maps	NA	NA
	Controlling Documents (Characterization Pkg, RSPs)	qualitative	NA
COMPARABILITY	Units of measure	dpm/100cm <sup>2</sup>	NA
COMPLETENESS	Plan vs Actual surveys Usable results vs unusable	>95% >95%	NA
SENSITIVITY	Detection limits	TSA ≤50 dpm/100cm <sup>2</sup> RA ≤10 dpm/100cm <sup>2</sup>	all measures

		COMMENTS
Multi-point calibration through the measurement range encountered in the field, programmatic records		
Performed daily/within range.		
All local area backgrounds were within expected ranges (i.e., no elevated anomalies)		
N/A		
Random w/ statistical confidence		
Random and biased measurement locations controlled/mapped to ±1m		
Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files), thorough documentation of the planning, sampling/analysis process, and data reduction into formats		
Use of standardized engineering units in the reporting of measurement results		
See Table E-4 for details		
PDS MDAs ≤ 50% DCGL <sub>w</sub>		

Table E-2 V&amp;V of Asbestos Results - Building 790

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		COMMENTS
ASBESTOS	METHOD. EPA 600/R-93/116	LAB -->	Reservoirs Environmental, Inc	
		RIN -->	RIN03Z1297	
	QUALITY REQUIREMENT	Measure	Frequency	
ACCURACY	Calibrations Initial/continuing	below detectable amounts	≥ 1	Semi-quantitative, per (microscopic) visual estimation
PRECISION	Actual Number Sampled LCSD Lab duplicates	all below detectable amounts	≥ 7 samples	Semi-quantitative, per (microscopic) visual estimation
REPRESENTATIVENESS	COC	Qualitative	NA	Chain-of-Custody intact completed paperwork, containers w/ custody seals
	Hold times/preservation	Qualitative	NA	N/A
	Controlling Documents (Plans, Procedures, maps, etc )	Qualitative	NA	See original Chemical Characterization Package (planning document), for field/sampling procedures (located in project file,) thorough documentation of the planning, sampling/analysis process, and data reduction into formats
COMPARABILITY	Measurement Units	% by bulk volume	NA	Use of standardized engineering units in the reporting of measurement results
COMPLETENESS	Plan vs Actual samples Usable results vs. unusable	Qualitative	NA	See Table E-4, final number of samples at Certified Inspector's discretion
SENSITIVITY	Detection limits	<1% by volume	all measures	N/A

Table E-3 V&amp;V of Beryllium Results - Building 790

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE	
BERYLLIUM	Prep: NMAM 7300	LAB ---->	Johns Manville, Littleton, Co
	METHOD: OSHA ID-125G	RIN ---->	RIN03Z1298
QUALITY REQUIREMENTS		Measure	Frequency
ACCURACY	Calibrations		
	Initial	linear calibration	≥1
	Continuing	80% < %R < 120%	≥1
	LCS/MS	80% < %R < 120%	≥1
	Blanks - lab & field	<MDL	≥1
PRECISION	Interference check std (ICP)	NA	NA
	LCSD	80% < %R < 120% (RPD < 20%)	≥1
	Field duplicate	all results < RL	≥1
REPRESENTATIVENESS	COC	Qualitative	NA
	Hold times/preservation	Qualitative	NA
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA
	Measurement units	ug/100cm <sup>2</sup>	NA
COMPARABILITY	Plan vs Actual samples	>95%	NA
COMPLETENESS	Usable results vs. unusable	>95%	NA
SENSITIVITY	Detection limits	MDL of	
		0.012 ug/100cm <sup>2</sup>	all measures
		COMMENTS No qualifications significant enough to change project decisions, i.e. classification of a Type I facility confirmed, all results were below associated action levels	

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**Table E-4 Data Completeness Summary - Building 790**

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Asbestos	Building 790 (interior)	6 biased	7 biased	No ACM present, all results < 1% by volume	40 CFR 763.86, CCR 1001-10, EPA 600/R-93/116 RIN03Z1297
Beryllium	Building 790 (interior)	10 biased	10 biased	No Beryllium contamination found, all results were below the action level (0.2 ug/100cm <sup>2</sup> ) and investigative level (0.1 ug/100cm <sup>2</sup> )	10 CFR 850, OSHA ID-125G RIN03Z1298
Radiological	Survey Area 4 Survey Unit 790-4-001 Building 790 (interior)	25 $\alpha$ TSA (15 random/10 biased) and 25 $\alpha$ Smears (15 random/10 biased)  10 $\alpha$ TSA and 10 $\alpha$ Smears (equipment)  2 QC TSA  25% $\alpha$ $\beta$ scans of interior floor surfaces and 5% $\alpha$ $\beta$ scans of interior surfaces above floor	25 $\alpha$ TSA (15 random/10 biased) and 25 $\alpha$ Smears (15 random/10 biased)  10 $\alpha$ TSA and 10 $\alpha$ Smears (equipment)  2 QC TSA  25% $\alpha$ $\beta$ scans of interior floor surfaces and 5% $\alpha$ $\beta$ scans of interior surfaces above floor	No contamination at any location, all values below unrestricted release levels	Uranium and/or Transuranic DCGLs as applicable